RESPONSE TO COMMENTS FOR

DRAFT TMDL REPORT FOR THE WEST FALMOUTH HARBOR SYSTEM
(Report Dated February 9, 2007)
DRAFT TMDL REPORT FOR THE OYSTER POND SYSTEM
(Report Dated January 23, 2007)
DRAFT TMDL REPORT FOR THE LITTLE POND SYSTEM
(Report Dated January 23, 2007)

Raymond Jack, Director, Public Works, Falmouth

Comment (1): The Draft TMDL contains several statements (possibly carry over from TMDL Reports from other MassDEP projects) that do not recognize the completed Nitrogen Management Plan for the watershed, and suggest several courses of action to meet the TMDL that may not apply to this watershed. Two of the statements are listed below:

- Page 1, 6th paragraph: "After public comment and final approval by the EPA, the TMDL will serve as a guide for future implementation activities. The MassDEP will work with the Town to develop specific implementation strategies to reduce N loadings, and will assist in developing a monitoring plan for assessing the success of the nutrient reduction strategies."

- Page 13, text following Table 3: "As previously indicated the present N loadings to West Falmouth Harbor embayment system must be reduced in order to restore conditions and to avoid further nutrient-related adverse environmental impacts. The critical final step in the development of the TMDL is modeling and analysis to determine the loadings required to achieve the target N concentrations.

These two examples represent the overall tone of the Draft TMDL that fails to acknowledge that there is a current plan for this watershed that appears to meet the TMDL.
Response: The original work that led to the first nitrogen management plan and the 2001 CMWP resulted in the construction of the wastewater treatment plant in West Falmouth. This represents an important first step, but, as was pointed out in the WWFP/FEIR, sewering is needed in the watershed of West Falmouth Harbor in order to meet the water quality goals. The new information, provided in the Tech Report, is useful for targeting areas for sewering. The new work should be considered a refinement of the original facilities plan. This issue has been added to the "Implementation Plans" section of the TMDL document.

Comment (2): The completed Nitrogen Management Plan is summarized in the January 2001 Wastewater Facilities Plan and Final Environmental Impact Report (WWFP/FEIR) on page 6-18. This document went through detailed review by MassDEP, Cape Cod Commission (CCC), and the Massachusetts Executive Office of Environmental Affairs (EOEA) as well as Dr. Howes of SMAST. The document and Nitrogen Management Plan were approved in the EOEA Secretary's Certificate dated March 16, 2001. The Nitrogen Management Plan was based on a nitrogen concentration threshold of 0.37 mg/l (at mid-ebb-tide) as developed for Snug Harbor by Howes, Smith, and Hampson in a Draft report (no date) that was delivered to the Town in early 2001. The Massachusetts Estuaries Project (MEP) Technical Report for this Draft TMDL appears to reference that draft report as (Howes et al. 2000). The MEP technical report does not reference the approved WWFP/FEIR and nitrogen management plan for this watershed.
Response: The original WWFP/FEIR provided a range of nitrogen concentrations: 0.35 to 0.37 mg/l. The Tech Report's studies refined this estimated range to a single value, 0.35 mg/l, based on additional

modeling, which can still be met in West Falmouth Harbor by the sewering strategy proposed in the original WWFP/FEIR. The identified goals within the TMDLs are the target threshold N concentrations at the sentinel stations. These have been set in the Tech Report and reiterated in the TMDL document. How this goal is met will be identified by the town with involvement by MassDEP or other agencies within MEP.

Comment (3): The MEP Technical Report does evaluate the projected future water quality in the West Falmouth Harbor based on use of the linked water quality model and the projected buildout conditions in the watershed. This evaluation is summarized on page 104 through 107. It does not state the basis of the build-out conditions in the watershed, but it does provide the following statement:

"In general, for build-out loading, the loading to the West Falmouth Harbor watershed decreases compared to present condition. This is because the build–out scenario for West Falmouth Harbor includes improvements to the WWTF and also sewering of the Harbor watershed, both of which contribute to the reduction in the nitrogen load to the system." Page 106 of the report states, "An important result of this build-out scenario model is that this loading condition will meet the threshold requirements for habitat restoration in the harbor"

Table V1-6 on page 106 indicates that this scenario meets the threshold nitrogen concentration in Snug Harbor of 0.35 mg/l on a tidally-averaged basis. This is good news that should be highlight in the Draft TMDL.

Review of Table V1-4 ("rainbow table") indicates that the nitrogen loads used in the build-out scenario are based on a treated-water recharge of 1 million gallons per day (mgd) from the WWTF which is consistent with the Nitrogen Management Plan loads identified in the WWFP/FEIR as approved by EOEA.

Response: MassDEP agrees with the facts stated in this comment. Furthermore, a statement highlighting the importance of meeting the threshold nitrogen concentrations has been added to the Methodology section of the TMDL document.

Comment (4): Detail is needed in the Draft TMDL on the "build-out scenario" to indicate if this scenario is based on all of the approved nitrogen loads indicated in the Nitrogen Management Plan of the WWFP/FEIR.
Response: The purpose of the TMDL document is to identify the necessary loads reductions needed to meet the identified threshold. The TMDL is not intended to identify how much of the Town can or should be built-out based on the previously developed Nitrogen Management Plan however these details are provided in the technical report to allow the Town to evaluate sewering options that address all the embayments within the Town. Once a recommended plan is identified it must be demonstrated that all embayment thresholds within the Town will be met before MassDEP will approve the final CWMP.

Comment (5): Detail is needed to correlate the 0.37 mg/l (mid-ebb-tide) threshold used in the WWFP/FEIR and the 0.35 mg/l (tidally averaged) threshold used in the Draft TMDL.
Response: The original WWFP/FEIR provided a range of nitrogen concentrations: 0.35 to 0.37 mg/l. The Tech Report's studies refined this estimated range to a single value, 0.35 mg/l, based on additional modeling, which can still be met in West Falmouth Harbor by the sewering strategy proposed in the original WWFP/FEIR. This is the value that the TMDL is based on.

Comment (6): Detail is needed to identify how the 0.35 mg/l (tidally –averaged) threshold will be monitored for compliance in the future.
Response: The Department is of the opinion that there are two forms of monitoring that are useful to determine progress towards achieving compliance with the TMDL keeping in mind that MassDEP's

position is that implementation will be conducted in an iterative process where adjustments may be needed along the way. The two forms include 1) tracking implementation progress as approved in the Town CWMP/Nutrient Management Plans and 2) monitoring ambient water quality conditions at the sentinel stations identified in the MEP Technical Report.

As you are aware the CWMP/Nutrient Management Plans evaluate various options to achieve the goals set out in the TMDL and Technical Report. It also makes a final recommendation based on existing or additional modeling runs, set out required activities, and identify a schedule to achieve the most cost effective solution that will result in compliance with the TMDLs for all embayments in the Town of Falmouth. Once a final plan is approved by the Department tracking progress on the agreed upon plan will, in effect, also be tracking progress towards water quality improvements in conformance with the TMDL.

Relative to water quality, the Department believes that an ambient monitoring program, much reduced from the data collection activities needed to properly assess conditions and to populate the model, will be important to determine actual compliance with water quality standards. Although the TMDL load values are not fixed, the target threshold nitrogen concentration at the sentinel stations is fixed. In addition, there are target threshold N concentrations that are provided for other non-sentinel locations in sub-embayments to protect habitat. These are the water quality targets, and a monitoring program should encompass these stations at a minimum. Through discussions amongst the MEP it is generally agreed that existing monitoring programs, which were designed to thoroughly assess conditions and populate water quality models, could be substantially reduced for compliance monitoring purposes. Although more specific details need to be developed the Department's current thinking is that about half the current effort (using the same data collection procedures) would be sufficient to monitor compliance over time and to observe trends in water quality changes. In addition, the benthic habitat and communities would require periodic monitoring on a frequency of about every 3-5 years. Finally, in addition to the above, existing monitoring conducted by MassDEP for eelgrass should continue into the future to observe any changes that may occur to eelgrass populations as a result of restoration efforts. It should be noted that the Department recognizes that any effort will be a financial burden to implement and as such we are seeking ways to help fund future monitoring activities.

The MEP will continue working with the Town to develop and refine monitoring plans that remain consistent with the goals of the TMDL. It must be recognized however that development and implementation of a monitoring plan will take some time but it is more important at this point to continue to focus efforts on reducing existing watershed loads to achieve water quality goals.

Thomas C. Cambareri, Water Resources Program Manager, Cape Cod Commission

Comment (7): In order to begin the MEP analysis of an estuary, three years worth of water quality data are necessary, but it is unclear at this point what sort of monitoring will be necessary to ensure TMDL compliance. DEP has offered in the draft TMDLs to continue to provide eelgrass data through the state's existing monitoring program, but it is unclear what will be required in benthic and water quality monitoring to satisfy the TMDL. DEP has offered to provide monitoring guidance to the Pleasant Bay communities; what is the timeline for the release of applicable monitoring guidance that was promised to the Pleasant Bay communities so that Falmouth can provide an acceptable monitoring plan in their CWMP?

Response: Please see the response to the previous comment.

Comment (8): Will additional state funding, either for monitoring and/or planning, be made available to Falmouth to assist them with implementation once they have the final TMDLs?

Response: Towns that are addressing impairments identified in an approved TMDL receive increased priority points in the SRF Program. Presently no additional funding is available through the Department, however MassDEP has requested additional funding under the Environmental Bond to support ongoing monitoring activities.

Comment (9): The "Reasonable Assurances" section of the TMDL states that the daily loads "will not be used as an enforcement tool." As the daily loads cited in the TMDL are one example of how a community might meet the water quality thresholds, these loads could be used as an enforcement tool by a town or the region, especially in an interim period prior to a completed CWMP. Perhaps the more correct statement is that the daily loads will not be used "by DEP" as an enforcement tool.
Response: The suggested change has been made in this and all other pending TMDL documents.

Comment (10): As currently stated, DEP will be implementing TMDL compliance through the Groundwater Discharge Permit program (for flows greater than 10,000 gpd) and through review of CWMPs. Given that most of Cape Cod relies on septic systems as the primary means of wastewater treatment, this means that most interim activities prior to the completion of a CWMP will continue to be the responsibility of Boards of Health. Will DEP be developing guidance to assist Boards of Health with issues to consider prior to the completion of a CWMP for estuaries with documented water quality problems?
Response: The implementation guidance document that the MassDEP issued in 2003 covers many aspects of nitrogen control, pertaining to all sources of nitrogen, and a wide variety of implementation processes that can serve as interim controls. This document, the "Massachusetts Estuaries Project Embayment Restoration and Guidance for Implementation Strategies, 2003" can be obtained on line at http://www.mass.gov/dep/water/resources/mamep.doc. Other than the implementation guidance document, MassDEP presently is not developing additional guidance to assist Boards of Health with issues to consider prior to the completion of a CWMP for estuaries with documented water quality problems. MassDEP however believes this is worthy of further discussion. MassDEP has however supported the concept of escrow accounts established under local or state consent orders to help address difficult Title 5 issues and will continue to support such initiatives.

Comment (11): Please include a watershed map that matches the TMDLs segment names to the contributing watersheds. This will help show the interaction of the whole systems, both watershed and estuary, and assist in implementation discussions.
Response: The map has been added as Appendix E of the TMDL documents for West Falmouth Harbor, Oyster Pd and Little Pd.

Korrin N. Petersen, Esq., Advocacy Director

Comment (12): Figure 1, page iii – West Falmouth Harbor Percent Nutrient Loading. This figure inaccurately depicts Fertilizers and Runoff as being 35% of the nitrogen load to the harbor. The MEP Technical Report indicates that no more than 8% of the load should be assigned to Fertilizers and Runoff, Figure IV-6 (a-c).
Response: This modification has been made, reflecting the adjustments to the Technical Report that MassDEP received after the TMDL was prepared.

Comment (13): Table 1A, page 2 – The West Falmouth Harbor embayment system Waterbody Segment in Category 5 of the Massachusetts2002 and 2004 Integrated List. This table fails to indicate that the final 2004 Integrated List of Waters lists Nutrients, and other habitat alterations in addition to Pathogens, as impairing West Falmouth Harbor.
Response: This modification has been made, reflecting the adjustments to the Technical Report that MassDEP received after the TMDL was prepared.

Comment (14): Figure 4, page 6 – West Falmouth Harbor Percent Nutrient Loading. This figure inaccurately depicts Fertilizers and Runoff as being 35% of the nitrogen load to the harbor. The MEP Technical Report indicates that no more than 8% of the load should be assigned to Fertilizers and Runoff, Figure IV-6 (a-c). Furthermore, the text associated with this Figure inaccurately claims that "the N affecting this embayment system originates from the wastewater treatment facility, fertilizers, and runoff with a lower level coming from on-site subsurface wastewater disposal systems (septic systems)…"

Response: This modification has been made, reflecting the adjustments to the Technical Report that MassDEP received after the TMDL was prepared.

Comment (15): Discussion page 11 to 12. In discussing the controllable nitrogen load in this system, the draft TMDL on page 12 states that "the wastewater treatment facility contributes 46%, land use contributes 41%, and septic systems contribute 13%." Again, the Coalition refers DEP to Figure IV-6 (a-c) of the MEP Technical Report.

Response: This modification has been made, reflecting the adjustments to the Technical Report that MassDEP received after the TMDL was prepared.

Comment (16): Figure 5, page 16 – Percent Contribution of Locally Controllable Sources of Nitrogen. This pie chart depicts inaccurate load allocations. It should be altered to reflect the information provided in Figure IV-6 (a-c) of the MEP Technical Report. In addition, the discussion of this Figure 5 on page 17 attributing the "overwhelming majority of locally controllable N" to "wastewater treatment facility and land use" should be corrected to reflect that the overwhelming majority of locally controllable N comes from the wastewater treatment facility and on-site septic systems (not land use).

Response: This modification has been made, reflecting the adjustments to the Technical Report that MassDEP received after the TMDL was prepared.

Comment (17): Problem Assessment. The Problem Assessment section of this draft TMDL attributes the nutrient load to groundwater as a function of population. (Page 4) While this is certainly an accurate statement, it is worth noting that the WWTF imports waste from the growing population outside of the West Falmouth Harbor watershed in addition to the growing number of on-site septic systems within the West Falmouth Harbor watershed.

Response: This issue has been added to the discussion of the problem assessment.

Comment (18): Description of the Applicable Water Quality Standards. The Coalition suggests that a discussion of 314 CMR 5.00, the Ground Water Discharge Permit Program is warranted in the Description of Applicable Water Quality Standards section of this TMDL. Since the largest contributor of the nitrogen load to West Falmouth Harbor is the Wastewater Treatment Facility, permitted pursuant to 314 CMR 5.00, its application is directly related. Specifically, 314 CMR 5.06 restricts the issuance of a permit when the discharge will cause or contribute to a condition in contravention of water quality standards. Evidence presented in this draft TMDL suggests that the site-specific limits necessary to control accelerated or cultural eutrophication (314 CMR 4.05(5)(c)) will directly affect the limits contained within the ground water discharge permit.

Response: Similar language has been added to the Description of Applicable Water Quality Standard section.

Comment (19): West Falmouth Harbor Threshold Nitrogen Concentrations. The draft TMDL properly identifies the site-specific target for nitrogen concentrations at 0.35mg/L. (page 10) The draft also points out in Table 2, that the observed (current) nitrogen concentration at the sentinel station is 0.44mg/L and correctly concludes that "the present N loadings to West Falmouth Harbor embayment system MUST be reduced in order to restore conditions and to avoid further nutrient-related adverse environmental impacts." (page 13, emphasis added) The draft further

emphasizes that the critical step in the development of the TMDL is modeling and analysis to determine the loadings required to achieve the target N concentrations.
Response: MassDEP appreciates this comment.

Comment (20): While the draft presents one scenario as to how to reduce existing load to achieve the site specific concentration, the Coalition requests that this TMDL include a load allocation pursuant to the supplementary scenarios performed by the MEP and reported in a technical memorandum dated February 22, 2007 and distributed to The Coalition, The Town of Falmouth, The Cape Cod Commission, and The MA DEP. These scenarios helped corroborate the result in the MEP Technical Report, and cited here, that the upgraded WWTF alone will not restore West Falmouth Harbor. (page 14) Specifically, these scenario runs clarified that any discharge exceeding 0.5MGD will violate the site specific threshold limit of 0.35mg/L and furthermore, that increasing the flow to the WWTF to 0.7 or 1.0 MGD will result in large exceedences of the threshold limit of 0.35mg/L. Due to the fact that the WWTF is responsible for the largest load to the Harbor, it is critical that this TMDL site these discharge limitations.
Response: The Department acknowledges the additional analysis cited above and recognizes that the threshold limit of 0.35 mg/l will be exceeded if the WWTF exceeds 0.5 MGD absent additional sewering in the West Falmouth Watershed. The Department will add language to the permit that requires additional sewering to meet the goals of the TMDL.

Comment (21): MA DEP Responsibility. At the outset of this TMDL, the MA DEP states the intention to work with the Town to develop specific implementation strategies to reduce nitrogen loading as well as developing a monitoring plan for assessing the success of the nutrient reduction strategies. (Page 1) The Coalition requests additional information on the specific actions the DEP intends to take in order to insure compliance with the TMDL.
Response: The MassDEP will be working closely with the Town of Falmouth to develop a coordinated plan that addresses both West Falmouth Harbor as well as other nutrient impaired embayments associated with the Town. We will assure that the water quality issues throughout the whole town, included in both of the CWMPs, are prioritized and addressed and assure that proposed sewering, including that in the West Falmouth Harbor watershed, will be adequate to achieve water quality goals. We will also be working with the Town over time to develop a realistic monitoring plan to monitor compliance with the TMDL the initial details of which are provided in comment #6 above.

Comment (22): Reasonable Assurances. The Coalition requests that the DEP retract its statement in this draft TMDL that the TMDL "will not be used as an enforcement tool, but may be used by local communities as a management tool." (Page 21) The Coalition is deeply concerned with the intent of this statement. First, this TMDL will function as a valuable management tool and communities MUST use it as a means toward achieving compliance with State Water Quality Standards. Secondly, the US EPA's guidance for developing nutrient TMDLs clearly requires States to include implementation plans for 303(d) listed waters. The DEP must be prepared to enforce this requirement and insure that towns move towards implementation of TMDLs.
Response: MassDEP prefers to work cooperatively with communities to protect and restore impaired waters. This is especially true when pollution comes from nonpoint sources such as stormwater runoff and on-site wastewater disposal, and where solutions are less straightforward than additional treatment of a point source discharge.

As long as a plan is developed and actions are being taken at a reasonable pace to achieve the goals of the TMDL, MassDEP will use discretion in taking enforcement steps. However, in the event that reasonable progress is not being made, MassDEP can take enforcement action through the broad

authority granted by the Massachusetts Clean Waters Act, the Massachusetts Water Quality Standards, and through point source discharge permits.

Finally, as a point of clarification EPA guidance does indeed encourage states to develop implementation plans as part of TMDL development however it is not a regulatory requirement that it must be included in the TMDL nor does EPA formally approve it.